## REMARKS/ARGUMENTS

This letter is responsive to the Office Action dated **May 7, 2003**.

The Office Action requires restriction to one of the following inventions under 35 U.S.C. 121:

I. Claims 1-4 and 11, drawn to a reactor for filtering water, classified in class 210, subclass 194.
II. Claims 5-10, drawn to a process for filtering water, classified in class 210, subclass 798.

Applicant confirms the election without traverse to prosecute the invention of group II, namely Claims 5-10.

Step (e) of Claim 5 has been amended to clarify that the bubbles cause a gas to be liberated from the water in the tank. Step (f) has been amended to clarify that the gas liberated from the water in the tank in step (e) is collected and returned to the tank by way of the bubbles. Claim 6 has been amended to correspond grammatically with the changes to claim 5.

The Office Action rejects Claim 5 under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,607,593 (hereinafter "Cote et al.").

The Examiner provides at paragraph 6 of the Office Action:

> "Cote et al. teaches a water filtering process comprising providing a tank (1, Figure 1) containing filtering membranes (3), introducing feed water and keeping the modules submerged (4, col. 9, lines 20-25), withdrawing filtered permeate (10) and retentate (28), introducing bubbles in the water to inhibit membrane fouling (col. 4, lines 18-25), collecting and recycling the gases (col. 4, lines 32-60)."

Cote et al. relates to a water treatment installation that includes an ozone injection means. The ozone can be introduced into the installation in one of the following forms: (a) gaseous monophase form; (b) a biphase form (ozone + water); or (c) an aqueous monophase form. The installation has means for the recovery of residual ozone. Cote et al. mentions in passing that the recovered ozone could be reinjected back into the installation or that it could be destroyed (see col. 4, lines 45-48). Cote et al. does not disclose how the recovered ozone is reinjected back into the installation. Additionally, Cote et al. does not specify the form in which the ozone is reinjected back into the installation (e.g., gaseous monophase form, biphase form, or aqueous monophase form (see col. 4, lines 36-44)). Accordingly, Cote et al. does not specify returning the collected ozone into the tank by way of the bubbles.

Amended Claim 5 requires that the bubbles cause a gas to be liberated from the water in the tank and that the gas liberated from the water in the tank be collected and returned to the tank. As described above, Cote et al. discloses injecting ozone into the tank, recovering the residual ozone, and reinjecting the recovered ozone back into the installation. Ozone is not a gas liberated from the tank water, but rather a gas that the inventors in Cote et al are trying to add to the tank water. Accordingly, Cote et al. does not disclose collecting any gas that is 'liberated' from the water in the tank by the bubbles, and returning such a liberated gas to the tank water. Accordingly, it is respectfully submitted that Cote et al. does not anticipate Claim 5.

The Office Action rejects Claims 6-10 under 35 U.S.C. 103(a) as being unpatentable over Cote et al., and further in view of U.S. Patent No. 6,221,254 B1 (hereinafter "Dickerson et al.").

The Examiner provides at paragraph 10 of the Office Action:

> "Cote teaches all the limitations of Claim 5. Claims 6-10 add further limitations, which are not taught by Cote, but taught by Dickerson as follows: Gases include CO2 up to 80% in claims 6 and 7 (col. 6, lines 30-35; abstract; col. 5, lines 4-59; claim 1). It would be obvious to one of ordinary skill in the art at the time of invention to use the teaching of Dickerson in the teaching of Cote to have improved filtration including pH control, precipitation, coagulation and flotation using CO2 gas.
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> Regarding Scaling tendencies in Claim 8 and Langlier Scaling index > 0.5 in Claim 9, it would be obvious to one of ordinary skill in the art at the time of the invention that hard water has scaling tendencies and that the hard water of Langlier scaling index 0.5 is naturally occurring.
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> Regarding Claim 10, Cote et al. teaches adding coagulants to the feed water in the tank (col. 1, lines 20-25; col. 2, lines 29-35)."

Cote et al. is concerned with adding toxic gas to tank water. Cote teaches recovering the residual ozone from the water because it cannot be released directly into the environment. Cote et al. does not teach returning a liberated gas to the tank for the purpose of managing the chemistry of the water, nor is there any suggestion or motivation to modify the Cote et al. process to achieve this purpose. Dickerson et al. relates to a method for purifying an aqueous liquid stream comprising the step of introducing carbon dioxide into the liquid stream in a manner sufficient to cause coagulation of proteinaceous materials. Dickerson et al. additionally teaches recovering and recycling the carbon dioxide back into the aqueous liquid stream. Like Cote et al., Dickerson et al. is concerned with preventing the escape of a gas that they are trying to add to the tank water. Dickerson et al. does not teach that bubbles used to inhibit fouling of a

membrane might liberate a gas from the tank water, nor does it disclose collecting the gas 'liberated' from the water in the tank and returning the collected gas (which was just previously 'liberated') to the tank by way of bubbles. There is no suggestion or motivation in the reference to modify Dickerson et al. to arrive at any of the above features. Accordingly, it is respectfully submitted that neither Dickerson et al. nor Cote et al. provide the elements of the present claims and also that there is no teaching in either reference towards any combination of them that provides the elements of the present claims.

For the reasons above, the Applicants submit that the claims are in condition for allowance.

Respectfully submitted,

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